

What is claimed is:

1. (Amended) A toy having a speech recognition function and two-way conversation for a dialogue partner, which has a first memory for storing speech compression data made by compressing a plurality of digital speech signal streams in a toy body that has a predetermined receiving space and is of at least one of human body and animal shapes and a second memory in which an operation space is arranged for recognizing a dialogue partner's speech signal inputted from the outside, said toy comprising:

a speech input/output part for converting at least one sentence of the dialogue partner's speech signal stored in said second memory into an electrical speech signal to output the converted signal and for audibly transmitting the speech signal restored to the dialogue partner;

a circular buffer in which the dialogue partner's digital speech signal outputted from said speech input/output part is temporarily stored;

a speech recognizer for dividing the digital speech signal stored in said circular buffer into speech recognizing words in accordance with speech recognizing constant of the compression

data stored in said first memory to thereby recognize the dialogue partner's speech by Viterbi algorithm;

a dialogue manager for selecting at least one response sentence from said first memory to match the content of the speech recognized in said speech recognizer with a predetermined scenario;

a speech decoder for extending and restoring the speech compression data of said first memory selected from said dialogue manager;

an analog/digital and digital/analog converter arranged between said speech decoder and said speech input/output part, for converting one side of analog and digital speech signals into the other side thereof; and

a memory controller arranged between said second memory and said speech recognizer, for moving the data from said first memory to said second memory.

2. (Deleted)

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5. (Amended) The toy of claim 1, wherein between said speech recognizer and said first memory and said dialogue manager and said first memory, there is provided a list controller for extracting the speech compression data and the speech recognizing constant from said first memory and for moving the speech recognizing data to said second memory.

6. The toy of claim 1, wherein said speech recognizer is comprised of:

a speech recognizing calculator for eliminating a predetermined noise from the digital speech signal in a frame unit stored in said circular buffer in accordance with the speech recognizing constant of said first memory to thereby calculate an inherent value for a single character as feature vector data;

a zerocrossing rate for detecting a zero point in a sampling value of the digital speech signal;

a power energy for calculating energy for the zero point to improve the reliability for the zero point detection at said zerocrossing rate;

a unit speech detector for detecting endpoint data of any one word of the continuous digital speech signals, based upon the output signal of said zerocrossing rate and said power energy;

a preprocessor for dividing the feature vector data of said speech recognizing calculator and the endpoint data of said unit speech detector by one word into the speech recognizing word; and

said second memory for providing an operation area where the speech compression data of said first memory corresponding to the divided word in said preprocessor which has been extracted by means of said list controller is operated by the Viterbi algorithm.

7. (Amended) The toy of claim 1, further comprising: a plurality of touch switches mounted on plural areas, for example, the back, nose, mouth, and hip, of said toy body and serving to inform said speech decoder of the dialogue partner's contact with said toy body.

8. (Amended) The toy of claim 7, wherein if the dialogue partner contacts said plurality of touch switches, the speech corresponding to the touched situation is extracted from said dialogue manager and said first memory and then extended and restored into a real speech in said speech decoder, such that the real speech is audibly sent to the dialogue partner via said speech input/output part.

9. (Amended) The toy of claim 1, wherein said speech input/output part is comprised of:

a first microphone for converting the dialogue partner's speech and the noise generated from the outside into an electrical signal to thereby output the converted signal to said circular buffer;

a second microphone for converting the noise generated from the outside into an electrical signal to thereby output the converted signal to said circular buffer; and

a power amplifier for amplifying the extended and restored speech signal from said speech decoder to audibly deliver the amplified signal via a speaker to the dialogue partner.

10. (Amended) The toy of claim 9, wherein said analog/digital and digital/analog converter is arranged between said circular buffer and said first and second microphones, for converting the output signals from said first and second microphones into digital signals, and also arranged between said speech decoder and said power amplifier, for converting the extended and restored digital speech signal from said speech decoder into an analog signal.

11. (Amended) The toy of claim 10, wherein between said A/D

and D/A converters and said power amplifier, there is provided a volume controller for adjusting an output strength of said power amplifier in response to the dialogue partner's volume adjustment command (for example, "speak louder" and "speak softer").

12. (Deleted)

13. (Added) The toy of claim 1, wherein said circular buffer, said speech recognizer, said dialogue manager, said speech decoder, said list controller, a timer and a clock generator are all contained within a single chip.

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